

[In the foregoing correspondence, allusion is made to a prior knowledge of the tea-plant of Assam. The following extract from Captain WILCOX's Memoir of a Survey of Assam, published in the Asiatic Researches XVII. p. 448, proves that officer to have been aware of its existence in the hills east of Sadiya:—he writes from Manché, a Khamti village, latitude  $27^{\circ} 29' 16''$ , longitude  $97^{\circ} 29'$ :—"according to promise, a specimen of the tea tree was brought to me from one of the neighbouring low hills; it was a full grown one, that is about five feet high; the leaves were coarse and large, and not numerous." Mr. SCORR and Captain DAVIDSON had also frequently seen it, and the latter officer says, that black tea is now brought to Goalpara from the Bhotan hills. In 1828, CAPTS. GRANT and PEMBERTON sent specimens of what the natives asserted to be the tea plant to Mr. Secretary SWINTON, from Mánipur, but for want of the fruit, its genuine nature was not identified. These travellers made tea from its leaves, and found it approach very nearly in flavour to ordinary black tea.—ED.]

V.—*Abstract of Meteorological Observations at Nasirabad. By Lieut.-Col. THOMAS OLIVER.*

TABLE I.—*Barometer reduced to 32°. Temperature of the External Air, and resulting elevation above Calcutta.*

Year and Month.	Barom. at 4 P.M.	Temp. of Air.	Elevation. Feet.	Year and Month.	Barom. at 4 P.M.	Temp. of air.	Elevation. Feet.
Dec. 1832, ..	28·432	55·7	1461	Dec. 1833, ..	28·391	65·4	1518
Jan. 1833, ..	·504	71·4	1440	Jan. 1834, ..	·402	70·0	1511
Feb. ....	·392	74·5	1437	Feb. ....	·392	76·5	1501
March, .....	·334	84·8	1431	March, .....	·281	86·5	1538
April, .....	·234	96·9	1460	April, .....	·212	93·8	1556
May, .....	·059	102·4	1545	May, .....	·101	103·8	1512
June, .....	·031	102·2	1518	June, .....	27·980	101·0	1572
July, .....	27·965	97·1	1543	July, .....	·977	88·1	1576
Aug. ....	28·021	93·9	1543	Aug. ....	28·001	88·2	1534
Sept. ....	·090	98·5	1507	Sept. ....			
Oct. ....	·296	93·7	1484	Oct. ....			
Nov. ....	·425	80·6	1497	Nov. ....			
	28·232	88·5	1489				

It is remarkable that the elevations for the nine months, since December, 1833, are all with one exception so much in excess to those for the same months of the former year: I am at a loss to account for this; the average height of my Barometer for the nine months in question being only ·026 lower than the average for the same months of the preceding year.

TABLE II.—*Mean Temperature of each Month, with the Differences from the Mean of the Year.*

Months.	Temp. Day.	Diff. from Mean.	Temp. Night.	Diff. from Mean.	Temp. Sun-set.	Diff. from Mean.
January, .....	61·5	— 17·9	57·9	— 17·4	66·0	— 15·8
February, .....	67·8	— 11·6	60·5	— 14·8	67·7	— 14·1
March, .....	75·4	— 4·0	71·9	— 3·4	80·7	— 1·1
April, .....	85·2	+ 5·8	80·9	+ 5·6	88·5	+ 6·7
May, .....	94·6	+ 15·2	89·9	+ 14·6	96·9	+ 15·1
June, .....	93·6	+ 14·2	88·8	+ 13·5	94·6	+ 12·8
July, .....	88·3	+ 8·9	84·7	+ 9·4	88·0	+ 6·2
August, .....	86·1	+ 6·7	82·1	+ 6·8	86·4	+ 4·6
September, .....	86·6	+ 7·2	83·1	+ 7·8	87·7	+ 5·9
October, .....	82·0	+ 2·6	78·0	+ 2·7	85·5	+ 3·7
November, .....	72·7	— 6·7	69·6	— 5·7	77·1	— 4·7
December, .....	58·7	— 20·7	55·6	— 19·7	63·0	— 18·8
Means, .....	79·4		75·3		81·8	

TABLE III.—Temperature of the Air, and Depression (D) of Wet Thermometer.

Year and Month.	Sun-rise.		2½ P. M.		4 P. M.		Sun-set.	
	Temp.	D.	Temp.	D.	Temp.	D.	Temp.	D.
December, 1832, .....	48·1	7·6	71·3	18·6	65·7	14·3	64·5	15·4
January, 1833, .....	50·4	9·7	73·3	20·0	71·4	19·1	66·2	16·7
February, .....	52·3	10·4	76·0	20·0	74·5	19·5	65·0	15·5
March, .....	62·7	13·4	86·7	27·1	84·8	26·3	80·3	23·6
April, .....	75·3	20·0	98·8	34·2	96·9	32·9	89·8	27·9
May, .....	82·7	15·6	105·6	34·3	102·4	32·6	96·1	28·2
June, .....	81·9	12·1	104·8	30·0	102·2	28·6	94·5	23·7
July, .....	82·3	7·5	99·8	23·1	97·1	19·2	91·5	15·7
August, .....	78·5	6·4	95·3	19·6	93·9	18·8	89·0	15·3
September, .....	80·9	11·1	100·3	25·9	98·5	25·2	92·6	22·3
October, .....	73·6	15·4	96·5	30·4	93·7	28·8	88·4	25·9
November, .....	62·1	8·2	83·5	20·8	80·6	19·3	77·1	17·4
December, .....	48·5	4·9	67·4	13·6	65·4	13·0	61·5	11·1
January, 1834, .....	49·0	9·4	73·2	20·8	70·0	19·0	65·7	17·4
February, .....	54·3	9·0	78·7	23·4	76·5	22·5	70·4	17·8
March, .....	63·4	13·8	88·4	28·1	86·5	27·2	81·1	23·6
April, .....	71·0	16·2	96·8	31·8	93·8	30·3	87·3	26·6
May, .....	83·5	18·4	105·8	36·6	103·8	35·4	97·6	31·1
June, .....	84·0	12·3	104·1	27·8	101·0	25·5	94·7	21·9
July, .....	80·8	4·4	90·8	12·8	88·1	10·6	84·5	7·3
August, .....	76·9	3·7	89·9	13·1	88·2	12·4	83·8	8·6
September, .....	75·9	2·5	89·7	12·5	..	..	82·9	7·6
October, .....	67·4	5·7	89·4	21·9	..	..	82·5	17·4

TABLE IV.—Dew Point (S), Comparative Tension (T), and Grains of Aqueous Vapour in a cubic foot of Air (G).

Year and Month.	S.	T.	G.	Year and Month.	S.	T.	G.
Dec. 1832, ..	32·2	·371	2·42	Dec. 1833, ..	40·2	·525	3·15
Jan. 1833, ..	28·4	·294	2·11	Jan. 1834, ..	27·3	·289	2·04
Feb. ....	32·0	·265	2·36	Feb. ....	29·4	·261	2·15
March, ....	28·0	·189	2·03	March, ....	30·6	·198	2·20
April, ....	30·0	·139	2·11	April, ....	34·7	·180	2·52
May, ....	30·0	·110	2·08	May, ....	41·3	·163	3·13
June, ....	59·0	·326	5·66	June, ....	64·3	·382	6·69
July, ....	69·5	·500	7·93	July, ....	74·3	·694	9·37
Aug. ....	67·7	·531	7·50	Aug. ....	71·9	·689	8·70
Sept. ....	60·5	·373	5·96	Sept. ....	72·7	·722	8·94
Oct. ....	40·5	·212	3·03	Oct. ....	55·4	·459	5·17
Nov. ....	46·4	·401	3·87	..	..	..	..
Means, ....	43·7	·309	3·92	Means, ....	45·2	·415	4·91

The means for the last year are probably but little affected by the want of observations in November, since the hygrometric state of the air for that month appears to differ not very much from the mean of the year.

[The formula whence the dew-points in the above table are taken will be found in the first Volume of the JOURNAL, p. 508, and in the GLEANINGS IN SCIENCE, i. 193.—ED.]

Mean Results of four Years' Observations.

Months.	Barometer at 32°		Temperature of Air.		Mean Temperature.		S.	T.	G.
	4 P. M.	var.	4 P. M.	var.	Day.	Night.			
	inches.		°		°				
January,	28.475	+ .232	70.6	-17.0	60.9	57.5	31.6	.550	2.36
February,	.387	+ .151	72.2	-11.4	66.4	59.0	34.9	.368	2.66
March, ..	.316	+ .080	84.0	- 4.4	73.5	70.5	34.9	.265	2.66
April, ....	.224	- .010	95.5	+ 5.6	83.6	81.5	37.4	.194	2.80
May, ....	.109	- .127	101.8	+14.7	92.6	88.2	40.1	.175	3.06
June, ....	27.997	- .239	100.7	+14.6	92.5	87.7	63.3	.388	6.52
July, ....	.974	- .262	92.8	+ 9.6	87.5	83.8	71.7	.604	8.60
August, ..	28.024	- .212	88.8	+ 5.7	83.6	81.1	71.5	.679	8.60
September,	.137	- .099	90.9	+ 6.1	84.0	80.9	66.4	.578	7.39
October,...	.305	+ .069	90.2	+ 2.3	80.7	76.8	46.7	.334	4.00
November,	.431	+ .195	79.3	- 7.7	70.2	66.7	43.2	.392	3.47
December,	.451	+ .215	67.3	-18.3	59.6	56.7	38.2	.479	3.05
Means, ..	28.236	.478	86.2	33.0	77.9	74.2	48.3	.417	4.60

The mean temperature (day and night) from these four year's observations is 76°; but as Nasirabad is elevated above the level of the sea nearly 1500 feet, the air is or ought to be cooler on that account by about 5°·5, so that the temperature at the sea level would be 81·5, which is that assigned to the equator by HUMBOLDT.

If we calculate the mean temperature for the latitude (26° 18') by the formulæ which have been found in most cases to agree well with observation, we shall have,

By MAYER'S,.....	T (= 84°-52° sin <sup>2</sup> L) .....	= 73·8
BREWSTER'S,....	T (= 81°·5 cos. L) .....	= 73·1
DAUBUISSON'S,..	T (= 27 <sup>d</sup> cos. <sup>2</sup> L in centesimal degrees*) ....	= 71·0
ATKINSON'S,....	T (= 97°·08 cos. <sup>2</sup> L-10°·53) .....	= 71·9
	Mean =	72·5

which is 9° less than the observations give when reduced to the sea level. But it must be observed with regard to the locality of Nasirabad that it stands on an arid rock on which scarcely any vegetation exists unless during the rainy season: this will no doubt account for a part of the difference. Mr. ATKINSON in his elaborate paper on Astronomical and other Refractions, (vide Memoirs of the Royal Astronomical Society, 2nd volume,) considers that 4° may be deducted from the observed temperatures of "large extended plains:" allowing this, we have still 5° unaccounted for. However, on calculating by the same formulæ, the mean temperatures of several places in this country where observations have been made and recorded in this Journal, I find similar differences, part of which may very probably be owing to errors in the instruments used, as it is well known how great a difference exists in the thermometers manufactured for exportation to this country, no two of which are hardly ever found to agree in their indications, some differing several degrees from others. In the subjoined table, the latitudes and elevations of some of the places are given by rough estimation, not having at hand the means of ascertaining them accurately, but any probable errors in these estimations cannot affect the results materially. The difference of temperature due to elevation has been calculated by Mr. ATKINSON'S Formula, viz.

$$\text{Required diff. in degrees} = \frac{h}{251 + \frac{h}{200}}, \text{ } h \text{ being the elevation in feet.}$$

\* Or, in Fahrenheit's Scale.. . T=80°·6-48°·6 sin<sup>2</sup> L.



Comparison of Observed Mean Temperatures with those deduced from the Formula of  
MAYER, BREWSTER, DAUBUISSON, and ATKINSON.

Places.	Latitude.	Height in feet.	Observed Mean Temperature.	Difference due to Elevation.	Obs. Mn. Temp. reduced to the sea level.	Mean Temp. by the Formulæ.	Difference between the calculated & observed Mean Temperature.
	°		°	°	°	°	°
Gazipur, .....	25.30	400	77.4	1.6	79.0	73.1	-5.9
Fattigurh, ....	27.20	600	75.6	2.4	78.0	71.6	-6.4
Seringapatam,	12.30	2412	77.1	9.2	86.3	80.6	-5.7
Nasirabad, ....	26.18	1487	76.0	5.5	81.5	72.5	-9.0
Delhi, .....	28.27	800	73.4	3.1	76.5	70.7	-5.8
Calcutta, ....	22.50	100	78.1	0.4	78.5	75.0	-3.5
Landour, ....	30.20	7000	56.7	24.5	81.2	69.1	-12.1

VI.—Longitude of Nasirabad by Lunar Transits and by Observations of Moon Culminating Stars.—By Lieut.-Col. THOMAS OLIVER.

By Lunar Transits.

Months.	Longitude.			Sums of Seconds.	Means.			
	H.	M.	S.		H.	M.	S.	
February 16th, 1831, .....	4	58	44	44	4	58	44	
Ditto 22nd, .....	..	59	10	114	..	..	57	
March 1st, .....	..	58	57	171	..	..	57	
Ditto 22nd, .....	..	59	12	243	..	..	61	
September 14th, .....	..	58	52	295	..	..	59	
Ditto 15th, .....	..	58	47	342	..	..	57	
November 12th, .....	..	59	21	423	..	..	60	
Ditto 13th, .....	..	59	05	488	..	..	61	
February 8th, 1832, .....	..	58	41	529	..	..	59	
Ditto 10th, .....	..	59	07	596	..	..	60	
March 9th, .....	..	59	12	668	..	..	61	
Ditto 10th, .....	..	59	00	728	..	..	61	
Ditto 12th, .....	..	59	00	788	..	..	61	
April 8th, .....	..	59	07	855	..	..	61	
May 7th, .....	..	59	29	944	..	..	63	
Ditto 9th, .....	..	58	50	994	..	..	62	
June 6th, .....	..	58	59	1053	..	..	62	
Ditto 7th, .....	..	58	49	1102	..	..	61	
October 1st, .....	..	58	50	1152	..	..	61	
November 1st, .....	..	59	09	1221	..	..	61	
Ditto 29th, .....	..	58	52	1273	..	..	61	
March 1st, 1833, .....	..	59	09	1342	..	..	61	
Ditto 28th, .....	..	59	05	1407	..	..	61	
Ditto 30th, .....	..	59	05	1472	..	..	61	
Ditto 31st, .....	..	59	04	1536	..	..	61	
April 28th, .....	..	58	57	1593	..	..	61	
Ditto 29th, .....	..	59	16	1669	..	..	62	
Ditto 30th, .....	..	59	18	1747	..	..	62	
Nvember 17th, ..	..	59	00	1807	..	..	62	
Ditto 19th, .....	..	58	42	1849	..	..	62	
Longitude by Lunar Transits,	..	..	..	..	=	4	59	02